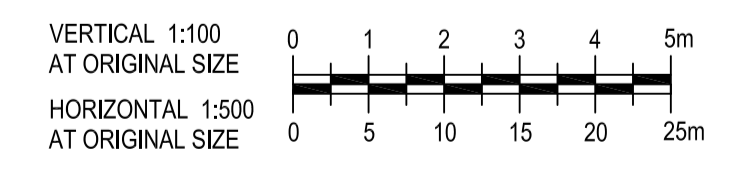
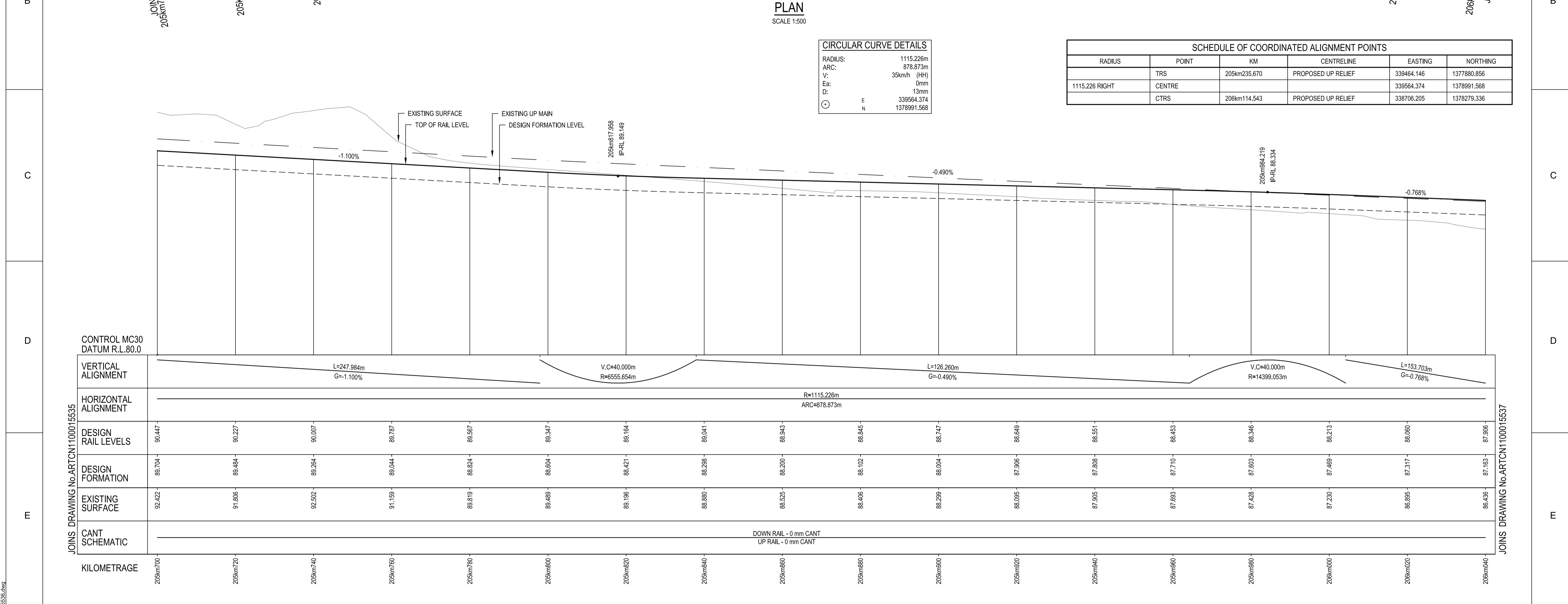


CIRCULAR CURVE DETAILS

RADIUS:	1115.226m
ARC:	878.873m
V:	35km/h (HH)
Ea:	0mm
D:	13mm
E	339564.374
N	1378991.568

SCHEDULE OF COORDINATED ALIGNMENT POINTS

RADIUS	POINT	KM	CENTRELINE	EASTING	NORTHING
1115.226 RIGHT	TRS	205km235.670	PROPOSED UP RELIEF	339464.146	1377880.856
	CENTRE			339564.374	1378991.568
	CTRS	206km114.543	PROPOSED UP RELIEF	338706.205	1378279.336



LEGEND

	PROPOSED TRACKWORK		EXISTING TRACK
	EXISTING TRACK TO BE REMOVED		PROPOSED TRACKWORK

- NOTES:**
- FOR GENERAL NOTES REFER TO DRG No. ARTCN1100015507.
 - INDICATED TRAIN SPEEDS USED IN CALCULATIONS REFER TO MODELLED TRAIN SPEEDS. FREIGHT, PASSENGER AND XPT MAXIMUM SPEEDS COMPLY AT HIGHER RATES OF CHANGE.

FOR CONSTRUCTION

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ARTC APPROVAL
Approved By

Used on / Next higher assembly:

H8R DWG NUMBER
H8R-DWG-S2G-TRA-2536

Alternate DMS number:

Approval Date

0	06.08.10	ISSUED FOR CONSTRUCTION	D.J.C	T.L*	G.W*
Rev	Date	Revision Description	Drawn	Checked	Approv.

Designing Company:
GHD
GHD Job Number:
22-14630

Address:
Level 3 GHD Tower, 24 Honeysuckle Drive
Newcastle NSW, 2300 Australia
F 61 2 4941 2796
W www.hunter8alliance.com.au

Drawn
D.CRANE

Designed
V.ALEX

Drafting Check
P.TOBIN*

Design Check
T.LYONS*

Approved
G.WICKENS*

Date
06/08/2010

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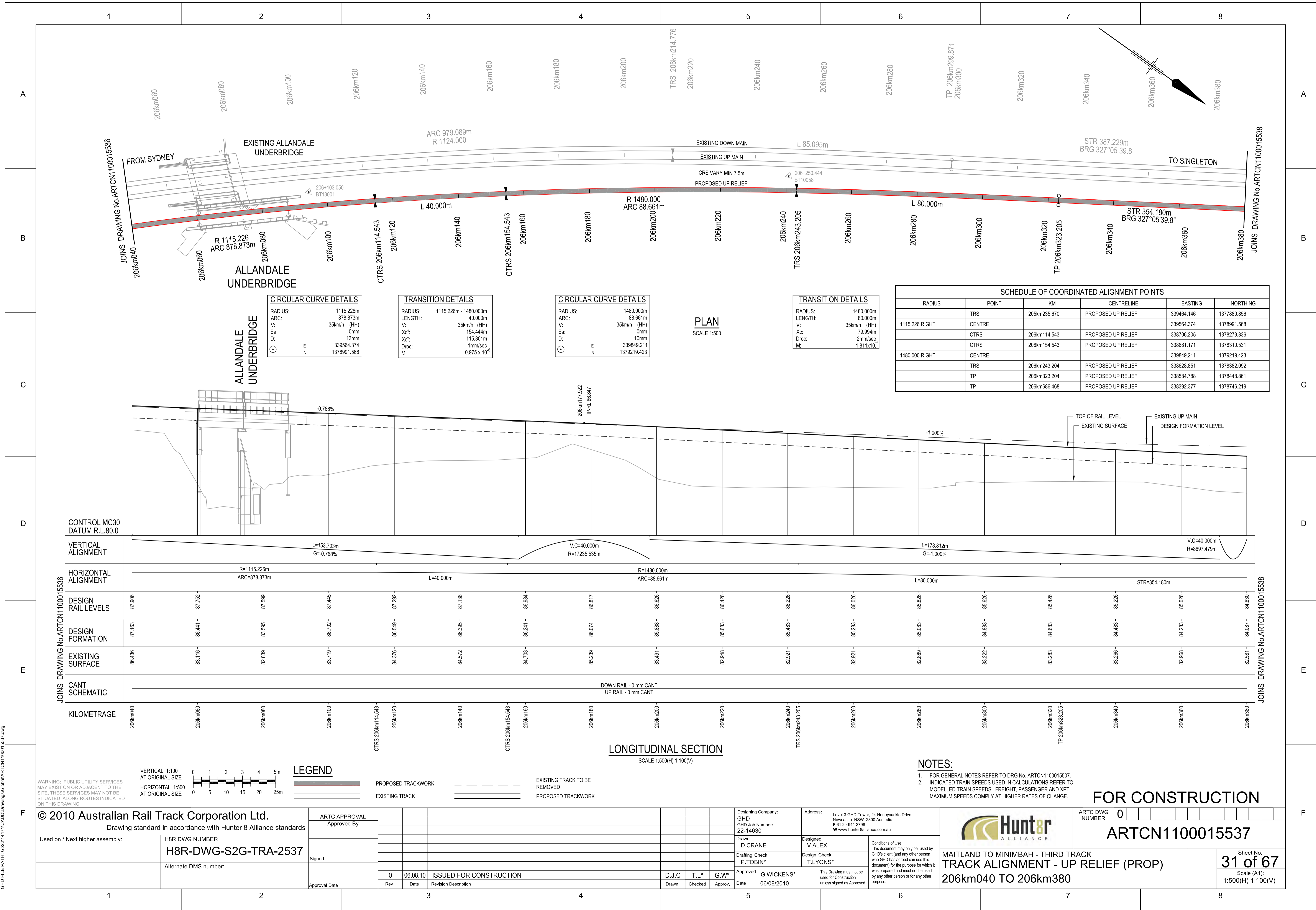
ARTC DWG NUMBER
0

ARTCN1100015536

MAITLAND TO MINIMBAH - THIRD TRACK
TRACK ALIGNMENT - UP RELIEF (PROP)
205km700 TO 206km040

Sheet No.
30 of 67
Scale (A1):
1:500(H) 1:100(V)

PLOT DATE: 06 August 2010 3:51 PM
PLOTTED BY: DCRA2
GHD FILE PATH: G:\2010\14630\Drawings\GHD\ARTCN1100015536.dwg



CIRCULAR CURVE DETAILS

RADIUS:	1115.226m
ARC:	878.873m
V:	35km/h (HH)
Ea:	0mm
D:	13mm
E	339564.374
N	1378991.568

TRANSITION DETAILS

RADIUS:	1115.226m - 1480.000m
LENGTH:	40.000m
V:	35km/h (HH)
Xc:	154.444m
Xc':	115.801m
Drop:	1mm/sec
M:	0.975 x 10 ⁻⁴

CIRCULAR CURVE DETAILS

RADIUS:	1480.000m
ARC:	88.661m
V:	35km/h (HH)
Ea:	0mm
D:	10mm
E	339849.211
N	1379219.423

TRANSITION DETAILS

RADIUS:	1480.000m
LENGTH:	80.000m
V:	35km/h (HH)
Xc:	79.994m
Drop:	2mm/sec
M:	1.811x10 ⁻⁶

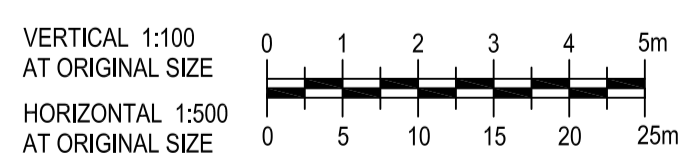
SCHEDULE OF COORDINATED ALIGNMENT POINTS

RADIUS	POINT	KM	CENTRELINE	EASTING	NORTHING
	TRS	205km235.670	PROPOSED UP RELIEF	339464.146	1377880.856
1115.226 RIGHT	CENTRE			339564.374	1378991.568
	CTRS	206km114.543	PROPOSED UP RELIEF	338706.205	1378279.336
	CTRS	206km154.543	PROPOSED UP RELIEF	338681.171	1378310.531
1480.000 RIGHT	CENTRE			339849.211	1379219.423
	TRS	206km243.204	PROPOSED UP RELIEF	338628.851	1378382.092
	TP	206km323.204	PROPOSED UP RELIEF	338584.788	1378448.861
	TP	206km686.468	PROPOSED UP RELIEF	338392.377	1378746.219

CONTROL MC30
DATUM R.L.80.0

VERTICAL ALIGNMENT	HORIZONTAL ALIGNMENT	DESIGN RAIL LEVELS	DESIGN FORMATION	EXISTING SURFACE	CANT SCHEMATIC
L=153.703m G=-0.768%	R=1115.226m ARC=878.873m	87.906	87.163	86.436	
	L=40.000m	87.752	86.441	83.116	
		87.599	83.595	82.839	
		87.445	86.702	83.719	
		87.292	86.549	84.376	
		87.138	86.395	84.572	
		86.984	86.241	84.703	
		86.817	86.074	85.239	
		86.626	85.888	83.491	
		86.426	85.683	82.948	
		86.226	85.483	82.921	
		86.026	85.283	82.921	
		85.826	85.083	82.889	
		85.626	84.883	83.222	
		85.426	84.683	83.283	
		85.226	84.483	83.266	
		85.026	84.283	82.966	
		84.830	84.087	82.881	

LONGITUDINAL SECTION
SCALE 1:500(H) 1:100(V)



LEGEND

	PROPOSED TRACKWORK		EXISTING TRACK
	EXISTING TRACK TO BE REMOVED		PROPOSED TRACKWORK

NOTES:

- FOR GENERAL NOTES REFER TO DRG No. ARTCN100015507.
- INDICATED TRAIN SPEEDS USED IN CALCULATIONS REFER TO MODELLED TRAIN SPEEDS. FREIGHT, PASSENGER AND XPT MAXIMUM SPEEDS COMPLY AT HIGHER RATES OF CHANGE.

FOR CONSTRUCTION

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Used on / Next higher assembly:	H8R-DWG-S2G-TRA-2537												
Alternate DMS number:													
ARTC APPROVAL	Approved By												
ARTC DWG NUMBER	0												
<table border="1"> <tr> <td>Rev</td> <td>Date</td> <td>Revision Description</td> <td>Drawn</td> <td>Checked</td> <td>Approved</td> </tr> <tr> <td>0</td> <td>06.08.10</td> <td>ISSUED FOR CONSTRUCTION</td> <td>D.J.C</td> <td>T.L*</td> <td>G.W*</td> </tr> </table>		Rev	Date	Revision Description	Drawn	Checked	Approved	0	06.08.10	ISSUED FOR CONSTRUCTION	D.J.C	T.L*	G.W*
Rev	Date	Revision Description	Drawn	Checked	Approved								
0	06.08.10	ISSUED FOR CONSTRUCTION	D.J.C	T.L*	G.W*								

Designing Company:	GHD	Address:	Level 3 GHD Tower, 24 Honesuckle Drive Newcastle NSW 2300 Australia F 612 4941 2796 W www.hunter8alliance.com.au
GHD Job Number:	22-14630	Drawn:	D.CRANE
		Designed:	V.ALEX
		Drafting Check:	P.TOBIN*
		Design Check:	T.LYONS*
Approved:	G.WICKENS*	Conditions of Use:	This document may only be used by GHD's client (and any other person who GHD has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.
Date:	06/08/2010	This Drawing must not be used for Construction unless signed as Approved	

Hunter ALLIANCE

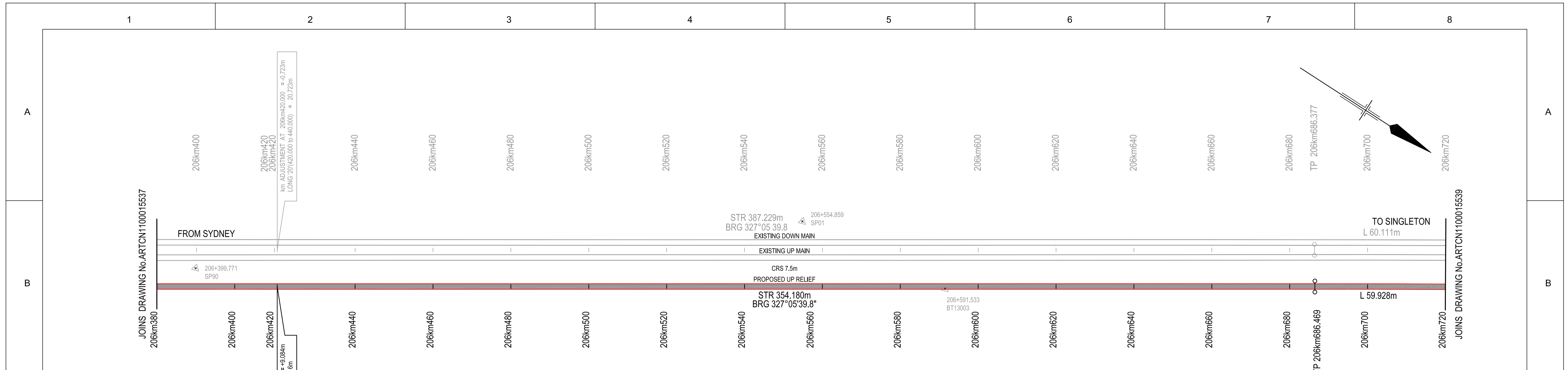
ARTC DWG NUMBER 0

ARTCN1100015537

MAITLAND TO MINIMBAH - THIRD TRACK
TRACK ALIGNMENT - UP RELIEF (PROP)
206km040 TO 206km380

Sheet No. **31 of 67**
Scale (A1): 1:500(H) 1:100(V)

PLOT DATE: 06 August 2010 3:51 PM PLOTTED BY: DCR42
GHD FILE PATH: G:\2010\14630\Drawings\08\ARTCN1100015537.dwg

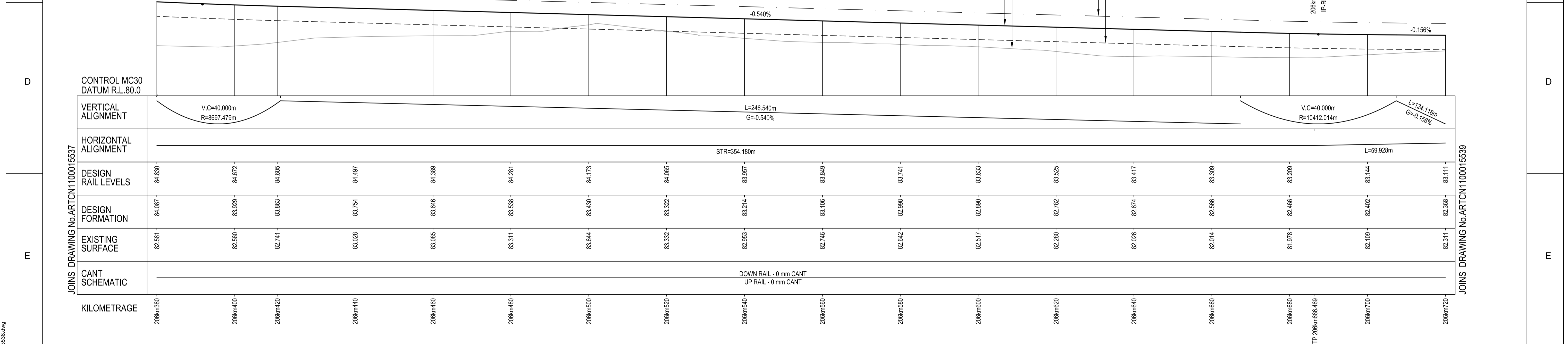


SCHEDULE OF COORDINATED ALIGNMENT POINTS

RADIUS	POINT	KM	CENTRELINE	EASTING	NORTHING
	TP	206km323.205	PROPOSED UP RELIEF	338584.788	1378448.861
	TP	206km686.469	PROPOSED UP RELIEF	338392.377	1378746.219
	TRS	206km746.397	PROPOSED UP RELIEF	338360.149	1378796.743

TRANSITION DETAILS

RADIUS:	1536.600m
LENGTH:	59.928m
V:	30km/h (HH)
Xc:	59.926m
Drcc:	1mm/sec
M:	1.811x10 ⁻⁶



KILOMETRAGE	206km380	206km400	206km420	206km440	206km460	206km480	206km500	206km520	206km540	206km560	206km580	206km600	206km620	206km640	206km660	206km680	206km700	206km720
DESIGN RAIL LEVELS	84.830	84.872	84.805	84.497	84.389	84.281	84.173	84.065	83.957	83.849	83.741	83.633	83.525	83.417	83.309	83.201	83.144	83.111
DESIGN FORMATION	84.087	83.929	83.863	83.754	83.646	83.538	83.430	83.322	83.214	83.106	82.998	82.890	82.782	82.674	82.566	82.458	82.402	82.388
EXISTING SURFACE	82.581	82.560	82.741	83.028	83.085	83.311	83.644	83.332	82.563	82.746	82.642	82.517	82.280	82.026	82.014	81.978	82.109	82.211

LONGITUDINAL SECTION
SCALE 1:500(H) 1:100(V)

LEGEND

PROPOSED TRACKWORK
 EXISTING TRACK
 EXISTING TRACK TO BE REMOVED
 PROPOSED TRACKWORK

WARNING: PUBLIC UTILITY SERVICES MAY EXIST ON OR ADJACENT TO THE SITE. THESE SERVICES MAY NOT BE SITUATED ALONG ROUTES INDICATED ON THIS DRAWING.

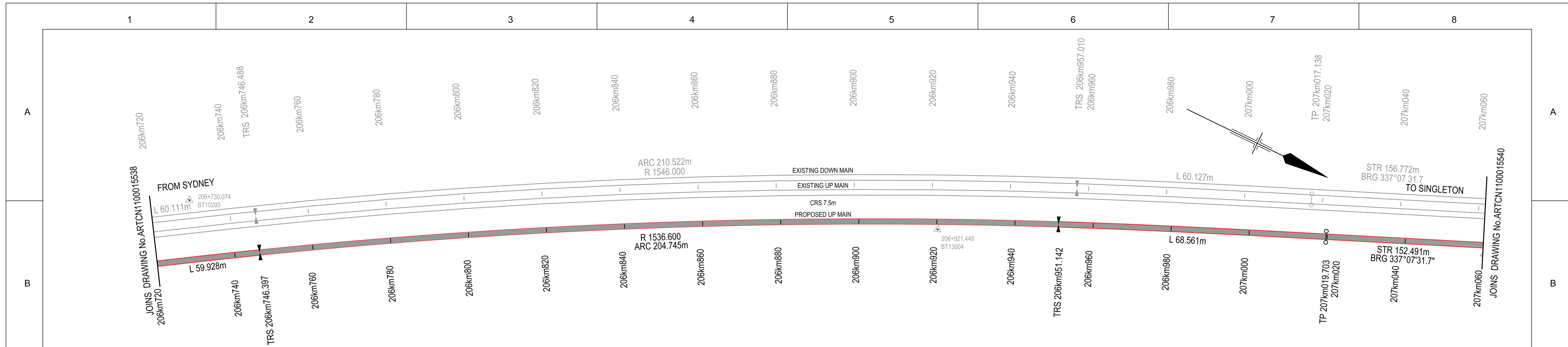
VERTICAL 1:100 AT ORIGINAL SIZE
 HORIZONTAL 1:500 AT ORIGINAL SIZE

- NOTES:**
- FOR GENERAL NOTES REFER TO DRG No. ARTCN100015507.
 - INDICATED TRAIN SPEEDS USED IN CALCULATIONS REFER TO MODELLED TRAIN SPEEDS. FREIGHT, PASSENGER AND XPT MAXIMUM SPEEDS COMPLY AT HIGHER RATES OF CHANGE.

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Used on / Next higher assembly: H8R-DWG-S2G-TRA-2538		H8R DWG NUMBER H8R-DWG-S2G-TRA-2538		Drawn D.CRANE		Designed V.ALEX		Conditions of Use: This document may only be used by GHD's client (and any other person who GHD has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.	
Alternate DMS number: _____		0 06.08.10 ISSUED FOR CONSTRUCTION		Approved G.WICKENS* Date 06/08/2010		This Drawing must not be used for Construction unless signed as Approved		ARTCN1100015538 MAITLAND TO MINIMBAH - THIRD TRACK TRACK ALIGNMENT - UP RELIEF (PROP) 206km380 TO 206km720	
Rev Date Revision Description		D.J.C T.L.* G.W.* Drawn Checked Approv.		Date 06/08/2010		Sheet No. 32 of 67 Scale (A1): 1:500(H) 1:100(V)		_____	

PLOT DATE: 06 August 2010 3:52 PM
 GHD FILE PATH: G:\2010\14630\Drawings\08\ARTCN1100015538.dwg



TRANSITION DETAILS

RADIUS:	1536.600m
LENGTH:	59.928m
V:	25km/h (HH)
Xc:	59.928m
Drcc:	1.00mm/sec
M:	1.81x10 ⁻⁶

CIRCULAR CURVE DETAILS

RADIUS:	1536.600m
ARC:	204.745m
V:	25km/h (HH)
Xc:	0mm
D:	5mm
E	339666.266
N	1379606.186

PLAN

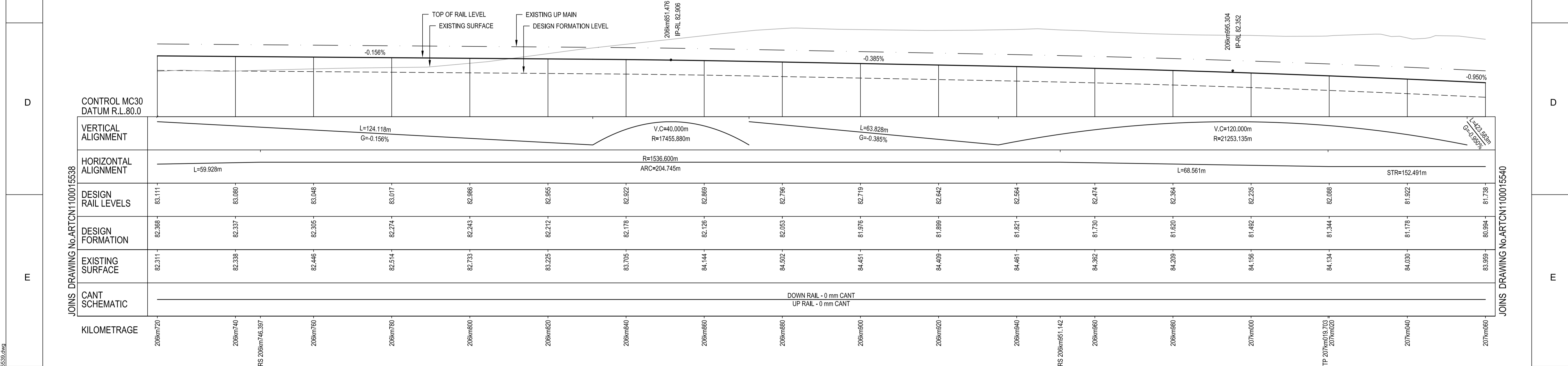
SCALE 1:500

TRANSITION DETAILS

RADIUS:	1536.600m
LENGTH:	68.561m
V:	25km/h (HH)
Xc:	68.558m
Drcc:	1mm/sec
M:	1.583x10 ⁻⁶

SCHEDULE OF COORDINATED ALIGNMENT POINTS

RADIUS	POINT	KM	CENTRELINE	EASTING	NORTHING
	TP	206km686.468	PROPOSED UP RELIEF	338392.377	1378746.219
	TRS	206km746.396	PROPOSED UP RELIEF	338360.149	1378796.743
1536.600 RIGHT	CENTRE			339666.266	1379606.186
	TRS	206km951.142	PROPOSED UP RELIEF	338264.191	1378977.437
	TP	207km019.703	PROPOSED UP RELIEF	338237.071	1379040.405
	TP	207km172.193	PROPOSED UP RELIEF	338177.796	1379180.904



LONGITUDINAL SECTION

SCALE 1:500(H) 1:100(V)

NOTES:

- FOR GENERAL NOTES REFER TO DRG No. ARTCN1100015507.
- INDICATED TRAIN SPEEDS USED IN CALCULATIONS REFER TO MODELLED TRAIN SPEEDS. FREIGHT, PASSENGER AND XPT MAXIMUM SPEEDS COMPLY AT HIGHER RATES OF CHANGE.

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Used on / Next higher assembly:
H8R-DWG-S2G-TRA-2539

Alternate DMS number:

ARTC APPROVAL	Approved By				
Signed:					
Approval Date	06.08.10	ISSUED FOR CONSTRUCTION			
Rev	Date	Revision Description	Drawn	Checked	Approved
			D.J.C	T.L.*	G.W.*

Designing Company:
GHD
GHD Job Number:
22-14630

Address:
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Drawn
D.CRANE

Designed
V.ALEX

Drafting Check
P.TOBIN*

Design Check
T.LYONS*

Approved
G.WICKENS*

Date
06/08/2010

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ARTC DWG NUMBER 0

ARTCN1100015539

Maitland to Minibah - Third Track
TRACK ALIGNMENT - UP RELIEF (PROP)
206km720 TO 207km060

Sheet No.
33 of 67
Scale (A1):
1:500(H) 1:100(V)

PLOT DATE: 06 August 2010 3:52 PM
GHD FILE PATH: G:\2010\14630\Drawings\03\ARTCN1100015539.dwg